CLAIMS

What is claimed is:

1.   A method in a data processing system having a plurality of patterns, wherein each of the plurality of patterns has an associated element type, the method comprising the steps of:

5   receiving an indication of an element type;

displaying a matching one of the plurality of patterns, the matching pattern having an associated element type that matches the received element type;

receiving from a user an indication of a selection of the matching pattern;

receiving an indication of a variation;

10   modifying the matching pattern based on the variation;

receiving an identification of a language; and

generating software code reflecting the modified matching pattern, wherein the software code is generated in the language.

2.   The method of claim 1 further comprising the step of determining whether the

15 variation is suitable for the matching pattern before modifying the matching pattern.

3.   The method of claim 1, further comprising the step of storing identification information for the matching pattern in a comment associated with the generated software code.

4.   The method of claim 1, wherein the step of generating includes the steps of

20 determining a location for storing the generated software code and storing the generated software code at the location.

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5.   A method in a data processing system comprising the steps of:

receiving an indication of a pattern;

receiving an indication of a variation;

modifying the pattern based on the variation; and

5   generating software code reflecting the modified pattern.

6.   The method of claim 5 further comprising the step of determining whether the variation is suitable for the pattern before modifying the pattern.

7.   The method of claim 5, wherein the generating step further comprises the step of receiving an indication of a language, wherein the software code is generated in the

10   language.

8.   The method of claim 5, further comprising the step of storing identification information for the pattern in a comment associated with the generated software code.

9.   The method of claim 5, wherein the step of generating includes the steps of determining a location for storing the generated software code and storing the generated

15   software code at the location.

10.   A method in a data processing system comprising the steps of:

receiving an indication of a pattern;

generating software code reflecting the pattern; and

storing identification information for the pattern in a comment associated with the

20   generated software code.

11.   The method of claim 10, further comprising the steps of:

receiving a variation for the pattern; and

modifying the pattern based on the variation before generating the source code

reflecting the modified pattern.

12. The method of claim 11, further comprising the step of determining whether the variation is suitable for the pattern before modifying the pattern.

13. The method of claim 10, wherein the generating step further comprises the step of receiving an indication of a language, wherein the software code is generated in the language.

14. The method of claim 10, wherein the step of generating includes the steps of determining a location for storing the generated software code and storing the generated software code at the location.

15. A method in a data processing system having a pattern, wherein the pattern has a first participant playing a first role in the pattern and a second participant playing a second role in the pattern, the method comprising the steps of:

receiving an indication of a first of a plurality of software elements;

determining whether the first software element is capable of playing the first role;

when it is determined that the first software element is capable of playing the first role,

determining whether a second of the plurality of software elements is capable of playing the second role;

when it is determined that the second software element is capable of playing the second role,

designating that the first software element plays the first role in the pattern; and

designating that the second software element plays the second role in the pattern.

16. The method of claim 15, further including the step of, when it is determined that the second software element is not capable of playing the second role, designating that a missing participant plays the second role in the pattern.

17.   The method of claim 15, wherein the step of designating the first software element includes the steps of:

detecting a portion of the first software element; and

replacing the portion of the first software element with at least a portion of the first
participant.

18.   The method of claim 15, further comprising the steps of:

receiving an indication of a variation for the first participant; and

modifying the first participant with the variation before the first software element is
designated to play the first role in the pattern.

19.   The method of claim 18, further comprising the steps of:

receiving an indication of a second variation for the second participant; and

modifying the second participant with the second variation before the second
software element is designated to play the second role of the pattern.

20.   The method of claim 15, further comprising the step of storing identification information for the pattern in a comment associated with the software code.

21.   A method in a data processing system having a pattern, wherein the pattern has a participant playing a role in the pattern, the method comprising the steps of:

receiving an indication of a software element;

determining whether the software element is capable of playing the role; and

when it is determined that the software element is capable of playing the role,
designating that the software element plays the role in the pattern.

22.   The method of claim 21, further including the step of, when it is determined that the software element is not capable of playing the role, designating that a missing participant plays the role in the pattern.

23.   The method of claim 21, wherein the step of designating includes the steps of:

detecting a portion of the software element; and

replacing the portion of the software element with at least a portion of the participant.

5   24.   The method of claim 21, further comprising the steps of:

receiving an indication of a variation for the participant; and

modifying the participant with the variation before the software element is designated to play the role in the pattern.

25.   The method of claim 21, further comprising the step of storing identification

10   information for the pattern in a comment associated with the code.

26.   The method of claim 21, wherein the participant is one of a plurality of participants.

27.   A method in a data processing system for creating a pattern having a first participant with a first role name, and a second participant with a second role name, wherein the pattern is based on code having a first software element with a first coded name and a second

15   software element with a second coded name, the method comprising the steps of:

receiving an indication of the first software element;

receiving an indication that the first software element corresponds to the first participant;

replacing the first coded name of the first software element with the first role name

20   of the first participant;

receiving an indication of the second software element;

receiving an indication that the second software element corresponds to the second participant;

replacing the second coded name of the second software element with the second

25   role name of the second participant; and

storing the code with the first coded name and the second coded name as the pattern.

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28.   A method in a data processing system comprising the steps of:

displaying a plurality of software elements to a user;

receiving an indication of a selected one of the plurality of software elements;

receiving an indication of a user-defined pattern role that the selected software

element plays in a pattern; and

storing the plurality of software elements as the pattern.

29.   A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system having a plurality of patterns, wherein each of the plurality of patterns has an associated element type, the method comprising the steps of:

receiving an indication of an element type;

displaying a matching one of the plurality of patterns, the matching pattern having an

associated element type that matches the received element type;

receiving from a user an indication of a selection of the matching pattern;

receiving an indication of a variation;

modifying the matching pattern based on the variation;

receiving an identification of a language; and

generating software code reflecting the modified matching pattern, wherein the

software code is generated in the language.

30.   The computer-readable medium of claim 29, wherein the method further comprises the step of determining whether the variation is suitable for the matching pattern before modifying the matching pattern.

31.   The computer-readable medium of claim 29, wherein the method further comprises the step of storing identification information for the matching pattern in a comment associated with the generated software code.

32.   The computer-readable medium of claim 29, wherein the step of generating includes the steps of determining a location for storing the generated software code and storing the generated software code at the location.

33.   A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system, the method comprising the steps of:
        receiving an indication of a pattern;
        receiving an indication of a variation;
        modifying the pattern based on the variation; and
        generating software code reflecting the modified pattern.

34.   The computer-readable medium of claim 33, wherein the method further comprises the step of determining whether the variation is suitable for the pattern before modifying the pattern.

35.   The computer-readable medium of claim 33, wherein the generating step further comprises the step of receiving an indication of a language, wherein the software code is generated in the language.

36.   The computer-readable medium of claim 33, wherein the method further comprises the step of storing identification information for the pattern in a comment associated with the generated software code.

37.   The computer-readable medium of claim 33, wherein the step of generating includes the steps of determining a location for storing the generated software code and storing the generated software code at the location.

38.   A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system, the method comprising the steps of:

   receiving an indication of a pattern;

5   generating software code reflecting the pattern; and

   storing identification information for the pattern in a comment associated with the generated software code.

39.   The computer-readable medium of claim 38, wherein the method further comprises the steps of:

10   receiving a variation for the pattern; and

   modifying the pattern based on the variation before generating the source code reflecting the modified pattern.

40.   The computer-readable medium of claim 39, wherein the method further comprises the step of determining whether the variation is suitable for the pattern before modifying the

15   pattern.

41.   The computer-readable medium of claim 38, wherein the generating step further comprises the step of receiving an indication of a language, wherein the software code is generated in the language.

42.   The computer-readable medium of claim 38, wherein the step of generating includes

20   the steps of determining a location for storing the generated software code and storing the generated software code at the location.

43.   A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system having a pattern, wherein the pattern has a first participant playing a first role in the pattern and a second participant playing a second role in the pattern, the method comprising the steps of:

5   receiving an indication of a first of a plurality of software elements;

determining whether the first software element is capable of playing the first role;

when it is determined that the first software element is capable of playing the first role,

determining whether a second of the plurality of software elements is capable

10   of playing the second role;

when it is determined that the second software element is capable of playing the second role,

designating that the first software element plays the first role in the pattern; and

15   designating that the second software element plays the second role in the pattern.

44.   The computer-readable medium of claim 43, wherein the method further includes the step of, when it is determined that the second software element is not capable of playing the second role, designating that a missing participant plays the second role in the pattern.

20   45.   The computer-readable medium of claim 43, wherein the step of designating the first software element includes the steps of:

detecting a portion of the first software element; and

replacing the portion of the first software element with at least a portion of the first participant.

46.   The computer-readable medium of claim 43, wherein the method further comprises the steps of:

        receiving an indication of a variation for the first participant; and

        modifying the first participant with the variation before the first software element is

5   designated to play the first role in the pattern.

47.   The computer-readable medium of claim 46, wherein the method further comprises the steps of:

        receiving an indication of a second variation for the second participant; and

        modifying the second participant with the second variation before the second

10   software element is designated to play the second role of the pattern.

48.   The computer-readable medium of claim 43, wherein the method further comprises the step of storing identification information for the pattern in a comment associated with the software code.

49.   A computer-readable medium containing instructions for controlling a data

15   processing system to perform a method, the data processing system having a pattern, wherein the pattern has a participant playing a role in the pattern, the method comprising the steps of:

        receiving an indication of the software element;

        determining whether the software element is capable of playing the role; and

20   when it is determined that the software element is capable of playing the role,

               designating that the software element plays the role in the pattern.

50.   The computer-readable medium of claim 49, wherein the method further includes the step of, when it is determined that the software element is not capable of playing the role, designating that a missing participant plays the role in the pattern.

51. The computer-readable medium of claim 49, wherein the step of designating includes the steps of:

> detecting a portion of the software element; and
>
> replacing the portion of the software element with at least a portion of the participant.

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52. The computer-readable medium of claim 49, wherein the method further comprises the steps of:

> receiving an indication of a variation for the participant; and
>
> modifying the participant with the variation before the software element is designated to play the role in the pattern.

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53. The computer-readable medium of claim 49, wherein the method further comprises the step of storing identification information for the pattern in a comment associated with the code.

54. The computer-readable medium of claim 49, wherein the participant is one of a plurality of participants.

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55.   A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system having a pattern having a first participant with a first role name, and a second participant with a second role name, wherein the pattern is based on code having a first software element with a first coded name

5   and a second software element with a second coded name, the method comprising the steps of:

> receiving an indication of the first software element;
>
> receiving an indication that the first software element corresponds to the first participant;

10   replacing the first coded name of the first software element with the first role name of the first participant;

> receiving an indication of the second software element;
>
> receiving an indication that the second software element corresponds to the second participant;

15   replacing the second coded name of the second software element with the second role name of the second participant; and

> storing the code with the first coded name and the second coded name as the pattern.

56.   A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system, the method comprising

20   the steps of:

> displaying a plurality of software elements to a user;
>
> receiving an indication of a selected one of the plurality of software elements;
>
> receiving an indication of a user-defined pattern role that the selected software element plays in a pattern; and

25   storing the plurality of software elements as the pattern.

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63.   The data processing system of claim 62, wherein the program, when it is determined that the software element is not capable of playing the role, designates that a missing participant plays the role in the pattern.

64.   The data processing system of claim 62, wherein when designating, the program detects a portion of the software element, and replaces the portion of the software element with at least a portion of the participant.

65.   The data processing system of claim 62, wherein the program further receives an indication of a variation for the participant, and modifies the participant with the variation before the software element is designated to play the role in the pattern.

66.   The data processing system of claim 62, wherein the program further stores identification information for the pattern in a comment associated with the code.

67.   The data processing system of claim 62, wherein the participant is one of a plurality of participants.

68.   A data processing system comprising:
        a memory device further comprising a program that displays a plurality of software
                elements to a user, receives an indication of a selected one of the plurality of
                software elements, receives an indication of a user-defined pattern role that
                the selected software element plays in a pattern, and stores the plurality of
                software elements as the pattern; and
        a processor for running the program.

69.   A system comprising:
        means for receiving an indication of a pattern;
        means for generating software code reflecting the pattern; and
        means for storing identification information for the pattern in a comment associated
                with the generated software code.

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57.   A data processing system comprising:

        a memory device further comprising a program that receives an indication of a pattern, that receives an indication of a variation, that modifies the pattern based on the variation, and that generates software code reflecting the modified pattern; and

5   a processor for running the program.

58.   The data processing system of claim 57, wherein the program further determines whether the variation is suitable for the pattern before modifying the pattern.

59.   The data processing system of claim 57, wherein the program receives an indication of a language and generates the software code in the language.

10   60.   The data processing system of claim 57, wherein the program further stores identification information for the pattern in a comment associated with the generated software code.

61.   The data processing system of claim 57, wherein the program determines a location for storing the generated software code and stores the generated software code at the
15   location.

62.   A data processing system comprising:
        a memory device further comprising:
                pattern having a participant playing a role in the pattern; and
                a program that receives an indication of the software element, that determines
20   whether the software element is capable of playing the role, and when
                        it is determined that the software element is capable of playing the
                        role, that designates that the software element plays the role in the
                        pattern; and
        a processor for running the program.

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70.   A method in a data processing system having source code, the method comprising
the steps of:

    detecting in the source code a first pattern; and

    replacing the first pattern with a second pattern that is different than the first pattern.